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4/5/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
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09676886 98099051 PMID: 9436466
Inhibitors of dipeptidyl peptidase IV (DP IV, CD26) induces secretion of transforming growth factor-beta 1 (TGF-beta 1) in stimulated mouse splenocytes and thymocytes.
Reinhold D; Bank U; Buhling F; Tager M; Born I; Faust J; Neubert K; Ansorge S
Department of Internal Medicine, Otto-von-Guericke-University Magdeburg, Germany.
Immunology letters (NETHERLANDS) Jun 1997, 58 (1) p29-35, ISSN 0165-2478 Journal Code: 7910006
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
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Various studies have shown that the ectoenzyme dipeptidyl peptidase IV (DP IV, CD26), expressed on T, NK and B cells in the human immune system, is involved in the regulation of DNA synthesis and cytokine production. The DP IV/CD26 was found also on mouse splenocytes and thymocytes. Here, we show that the specific DP IV inhibitors Lys[Z(NO2)]-thiazolidide, Lys[Z(NO2)]-pyrrolidide inhibit DNA synthesis as well as production of IL-2, IL-6 and IL-10 of PHA-stimulated mouse splenocytes and Con A-stimulated mouse thymocytes. Most importantly, these inhibitors induce a three to fourfold increased secretion of latent transforming growth factor beta 1 (TGF-beta 1) by mitogen-stimulated mouse immune cells, as measured with a specific TGF-beta 1 enzyme-linked immunosorbent assay (ELISA). These data demonstrate that CD26 plays a role also in regulation of DNA synthesis and cytokine production by murine immune cells, that the enzymatic activity is required for mediating these effects, and that TGF-beta 1 might have key functions in these processes.
Tags: Animal; Support, Non-U.S. Gov't
Descriptors: *Antigens, CD26--immunology--IM; *Spleen--immunology--IM; *Thymus Gland--immunology--IM; *Transforming Growth Factor beta--secretion --SE; Antigens, CD26--drug effects--DE; Cell Division--drug effects--DE; Dose-Response Relationship, Drug; Interleukins--secretion--SE; Lysine --analogs and derivatives--AA; Lysine--pharmacology--PD; Mice; Mice, Inbred BALB C; Protease Inhibitors--pharmacology--PD; Pyrrolidines --pharmacology--PD; Spleen--cytology--CY; Spleen--drug effects--DE; Thiazoles--pharmacology--PD; Thymus Gland--cytology--CY; Thymus Gland --drug effects--DE
CAS Registry No.: 0 (Interleukins); 0 (Protease Inhibitors); 0 (Pyrrolidines); 0 (Thiazoles); 0 (Transforming Growth Factor beta); 0 (lysyl-(Z(nitro))pyrrolidide); 0 (lysyl-(Z(nitro))thiazolidide); 56-87-1 (Lysine)
Enzyme No.: EC 3.4.14.5 (Antigens, CD26)
Record Date Created: 19980211

4/5/2 (Item 2 from file: 155)
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09535113 97447072 PMID: 9301523
Inhibitors of dipeptidyl peptidase IV induce secretion of transforming growth factor-beta 1 in PWM-stimulated PBMC and T cells.
Reinhold D; Bank U; Buhling F; Lendeckel U; Faust J; Neubert K; Ansorge S
Department of Internal Medicine, Otto-von-Guericke-University, Magdeburg, Germany.

Immunology (ENGLAND) Jul 1997, 91 (3) p354-60, ISSN 0019-2805
Journal Code: 0374672
Document type: Journal Article
Languages: ENGLISH
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Various studies have shown that the membrane ectoenzyme dipeptidyl peptidase IV (DP IV; CD26), expressed on T, natural killer (NK) and B cells in the immune system, is involved in the regulation of DNA synthesis and cytokine production. We show that the specific DP IV inhibitors Lys[Z(NO2)]-thiazolidide, Lys[Z(NO2)]-piperidide, and Lys[Z(NO2)]-pyrrolidide inhibit DNA synthesis as well as production of interleukin-2 (IL-2), IL-10, IL-12, and interferon-gamma (IFN-gamma) of pokeweed mitogen (PWM)-stimulated purified T cells. Most importantly, these inhibitors induce a three- to fourfold increased secretion of latent transforming growth factor-beta 1 (TGF-beta 1) by PWM-stimulated peripheral blood mononuclear cells (PBMC) and T cells, as measured with a specific TGF-beta 1 enzyme-linked immunosorbent assay and in the Mv1Lu bioassay. As we could demonstrate previously, TGF-beta 1 exhibits the same inhibitory effects as DP IV inhibitors on DNA synthesis and cytokine production (Cytokine 1994, 6, 382-8; J Interferon Cytokine Res 1995, 15, 685-90). A neutralizing chicken anti-TGF-beta 1 antibody was capable of abolishing the DP IV inhibitor-induced suppression of DNA synthesis of PWM-stimulated PBMC and T cells. These data suggest that TGF-beta 1 might have key functions in the molecular action of DP IV/CD26 in regulation of DNA synthesis and cytokine production.

Tags: Human; Support, Non-U.S. Gov't
Descriptors: *Antigens, CD26--immunology--IM; *Leukocytes, Mononuclear --immunology--IM; *Lymphocyte Transformation--drug effects--DE; *Protease Inhibitors--pharmacology--PD; *Transforming Growth Factor beta--metabolism --ME; Cells, Cultured; Cytokines--biosynthesis--BI; DNA--biosynthesis--BI; Pokeweed Mitogens--immunology--IM; T-Lymphocytes--immunology--IM; Transforming Growth Factor beta--immunology--IM
CAS Registry No.: 0 (Cytokines); 0 (Pokeweed Mitogens); 0 (Protease Inhibitors); 0 (Transforming Growth Factor beta); 9007-49-2 (DNA)
Enzyme No.: EC 3.4.14.5 (Antigens, CD26)
Record Date Created: 19970930
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